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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,624	06/03/2005	Eric Chemisky	S3-02P14125	8389

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EXAMINER	
ROMAN, LUIS ENRIQUE	
ART UNIT	**PAPER NUMBER**
2836	

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

3K

Office Action Summary	Application No.	Applicant(s)	
	10/537,624	CHEMISKY ET AL.	
	Examiner	Art Unit	
	Luis Roman	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06/03/05*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-33 and 36-39* is/are rejected.

7)☒ Claim(s) *34, 35* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *06/03/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 21, 22, 23, 24, 25, 26, 27, 28 & 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Rueger (US 6498418) in view of Giorgetta et al. (US 5173832).

Regarding claim 21 Rueger discloses a method (a person of the ordinary skill will understand a method that is intrinsically described by the functioning of the apparatus) of monitoring an actuator connected in an actuator circuit (Abstract), the method which comprises: measuring a first electrical current flowing through the actuator (Col. 3 lines 3-12 & Fig. 2 element 620, 320); measuring a second electrical current (Col. 7 lines 32-33 & Fig. 2 element 650) flowing in the actuator circuit (Fig. 2) before or after the actuator, comparing the first and second electrical currents for detection of a fault (Col. 3 lines 3-5); measuring a voltage in the actuator circuit (Col. 7 lines 35-37 & Fig. 2 element 640).

Rueger does not disclose wherein generating a diagnostic signal in dependence on the voltage in the actuator circuit, the diagnostic signal assuming any of at least three mutually different values respectively indicating a ground short circuit, a short circuit to a supply voltage, or an error-free state in dependence on an outcome of the comparing step.

Giorgetta et al. teaches an electronic power circuit for the detection and diagnosis of faults and the related method (Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Rueger device with the Giorgetta et al. device features because

it provides a more complete set of fault detections which will ensure a better functioning/protection of the device.

Regarding claim 22 Rueger in view of Giorgetta et al. discloses the monitoring method according to claim 21.
Rueger further discloses wherein the diagnostic signal is configured to assume at least four mutually different values in dependence on the outcome of comparing the measured first and second currents (Fig. 2 elements 620, 650), to distinguish between a voltage short circuit against to a first voltage and a voltage short circuit to a second voltage (Fig. 2 elements 610, 630).

Regarding claim 23 Rueger in view of Giorgetta et al. discloses the monitoring method according to claim 21.
Giorgetta et al. further discloses which comprises measuring a voltage increase and generating the diagnostic signal in dependence on the voltage increase (Col. 5 lines 16-27).

Regarding claim 24 Rueger in view of Giorgetta et al. the monitoring method according to claim 21.
Rueger further discloses which comprises measuring the voltage in the actuator circuit during a charging process (Col. 6 lines 50-61).
Giorgetta et al. further discloses which comprises measuring the voltage in the actuator circuit (Fig. 2 elements 13A<comparing voltages>), and generating the diagnostic signal in dependence on the measured voltage (Fig. 2 elements DIAG A-B <signal generated accordingly>).

Regarding claim 25 Rueger in view of Giorgetta et al. the monitoring method according to claim 21.
Rueger further discloses which comprises measuring the voltage in the actuator circuit between a charging process and a discharging process (Col. 6 lines 50-61).

Giorgetta et al. further discloses generating the diagnostic signal in dependence on the measured voltage (Fig. 2 elements DIAG A-B <signal generated accordingly>).

Regarding claim 26 Rueger in view of Giorgetta et al. discloses the monitoring method according to claim 21.
Rueger further discloses which comprises measuring the first and second currents flowing in the actuator circuit at two ground-side measuring points (Fig. 2 elements 620, 650).

Regarding claim 27 Rueger in view of Giorgetta et al. discloses the monitoring method according to claim 21.
Rueger further discloses which comprises measuring the first and second currents flowing in the actuator circuit at two voltage-side measuring points (Fig. 2 elements 610<load voltage side>, 630<power source voltage side>).

Regarding claim 28 Rueger in view of Giorgetta et al. discloses the monitoring method according to claim 21.
Rueger further discloses which comprises measuring one of the first and second currents at a ground-side measuring point (Fig. 2 element 620) and measuring one of the first and second currents at a voltage-side measuring point (Fig. 2 element 650<power source voltage side>).

Regarding claim 29 Rueger in view of Giorgetta et al. discloses a driver circuit for an actuator, comprising:
Rueger further discloses an actuator circuit for charging and discharging the actuator (Fig. 2 elements 220, 230), wherein the actuator is connected in said actuator circuit (Fig. 2 elements 310, 320), a first measuring device for measuring a first electrical current flowing through the actuator (Fig. 2 element 610 going to ICE), a second measuring device for measuring a second electrical current flowing in said actuator circuit before or after the actuator (Fig. 2 element 630 going to ICE), a third measuring

device for measuring an electrical voltage in said actuator circuit during a charging process (Fig. 2 element 620 going to ICE), a comparator unit connected to said first, second, and third measuring devices, said comparator unit being configured to effect a comparison between the first and second electrical currents, and to generate a diagnostic signal in dependence on the comparison and in dependence on the electrical voltage measured by said third measuring device (Col. 11 lines 23-41 & Fig. 5 elements 710 <first current>, 720 <second current>, 730 <voltage>, 820 <references>, 830 <comparator>).
Giorgetta et al. further discloses the diagnostic signal taking on one of at least three different values depending on the comparison between the measured currents, in order to distinguish between a ground short circuit, a short circuit to a supply voltage, and an error-free state, respectively (Col. 5 lines 7-40).

Regarding claim 32 Rueger in view of Giorgetta et al. discloses the driver circuit according to claim 29.
Rueger further discloses wherein said first measuring device comprises a measurement resistor (Fig. 2 resistor on top of node 610) connected in series with the actuator (Fig. 2 element 320).

Regarding claim 36 Rueger in view of Giorgetta et al. discloses the driver circuit according to claim 29.
Rueger further discloses wherein said first measuring device and said second measuring device are connected on a groundside of said actuator circuit (Fig. 2 elements 610, 630).

Regarding claim 37 Rueger in view of Giorgetta et al. discloses the driver circuit according to claim 29.
Rueger further discloses wherein said first measuring device and said second measuring device are connected on a voltage side of said actuator circuit (Fig. 2 elements 610, 630).

Regarding claim 38 Rueger in view of Giorgetta et al. discloses the driver circuit according to claim 29.
Rueger further discloses wherein one of said first and second measuring devices is connected on a ground side of said actuator circuit (Fig. 2 elements 610) and one of said first and second measuring devices is connected on a voltage side thereof (Fig. 2 element 630<power source voltage side>).

Claims 30, 31, 33 & 39 are rejected under 35 U.S.C. §103(a) as being unpatentable over Rueger (US 6498418) in view of Giorgetta et al. (US 5173832) and Yasuhiro Fukagawa et al. (JP 2002101673).

Regarding claim 30 Rueger in view of Giorgetta et al. discloses the driver circuit according to claim 29.
Rueger in view of Giorgetta et al. does not disclose further comprising a transformer having a primary winding and a secondary winding, and wherein said secondary winding is connected in said actuator circuit.
Yasuhiro Fukagawa et al. teaches further comprising a transformer having a primary winding and a secondary winding, and wherein said secondary winding is connected in said actuator circuit (Fig. 8 elements 13<secondary 132 connected to the actuator circuit 15, 151, 2>).
It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Rueger in view of Giorgetta et al. device with the Yasuhiro Fukagawa et al. teachings because it provides galvanic isolation between the power source and load. Moreover, a transformer is commonly used as a booster in DC/AC convertors to step up voltages.

Regarding claim 31 Rueger in view of Giorgetta et al. discloses the driver circuit according to claim 29.
Rueger further discloses wherein said actuator circuit has a first circuit branch and a parallel second circuit branch, said first circuit branch containing a discharge switch and

carrying the electrical current during a discharging process (Fig. 2 element 325), and said second circuit branch containing a diode and carrying the electrical current during a charging process (Fig. 2 element 320).

Regarding claim 33 Rueger in view of Giorgetta et al. and Yasuhiro Fukagawa et al. discloses the driver circuit according to claim 30.
Yasuhiro Fukagawa et al. further discloses wherein said second measuring device comprises a measurement resistor connected in series with a secondary winding of the transformer (Fig 8 element 17).

Regarding claim 39 Rueger in view of Giorgetta et al. discloses the driver circuit according to claim 29.
Rueger further discloses a measuring device at the actuators side (Fig. 2 resistor on top of node 610).
Rueger in view of Giorgetta et al. does not disclose wherein at least one of said first measuring device and said second measuring device is decoupled from a circuit input.
Yasuhiro Fukagawa et al. teaches a transformer isolating the power source side from the actuators side (Fig. 8 element 13).
It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Rueger in view of Giorgetta et al. device with the Yasuhiro Fukagawa et al. teachings because it provides galvanic isolation between the power source and load. Moreover, a transformer is commonly used as a booster in DC/AC convertors to step up voltages.

Allowable Subject Matter

Claims 34, 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis E. Román whose telephone number is (571) 272 – 5527. The examiner can normally be reached on Mon – Fri from 7:15 AM to 3:45 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system.

Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Luis E. Román
Patent Examiner
Art Unit 2836

LR/040606

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